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PATENT APPLICATION

00684.003545

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	:	
MASAYUKI SUZUKI	)	Examiner: Della J. Rutledge
Appln. No.: 10/699,933	)	Group Art Unit: 2851
Filed: November 4, 2003	)	Allowed: June 17, 2004
For: PROJECTION OPTICAL SYSTEM, EXPOSURE APPARATUS, AND DEVICE MANUFACTURING METHOD	)	Confirmation No.: 3891
	:	September 17, 2004

**Mail Stop 313(c)**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

THIRD INFORMATION DISCLOSURE STATEMENT

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56 and in accordance with the practice under 37 C.F.R. §§ 1.97 and 1.98, the Examiner's attention is directed to the documents listed on the enclosed Form PTO-1449. Copies of the listed non-U.S. documents are also enclosed.

REMARKS

Applicant respectfully submits that WO 2002/048796 discloses three embodiments. In the first embodiment, the first to sixth surfaces have a concave surface shape, a concave surface shape, a convex surface shape, a concave surface shape, a convex surface shape, and a concave surface shape, respectively. The first reflection surface has a largest curvature radius of 1997 mm, and an intermediate image is produced between the

second surface and the third surface. In the second embodiment disclosed in this document, the first to sixth surfaces have a concave surface shape, a concave surface shape, a convex surface shape, a concave surface shape, a convex surface shape, and a concave surface shape, respectively. The first reflection surface has a largest curvature radius of 1522 mm, and an intermediate image is produced between the second surface and the third surface. In the third embodiment disclosed in this document, the first to sixth surfaces have a concave surface shape, a concave surface shape, a convex surface shape, a concave surface shape, a convex surface shape, and a concave surface shape, respectively. The first reflection surface has a largest curvature radius of 1351 mm, and an intermediate image is produced between the second surface and the third surface. Applicant wishes to direct the Examiner's attention in particular to the third embodiment.

Applicant respectfully submits that U.S. Patent No. 6,033,079 discloses two embodiments. In the first embodiment, the first to sixth surfaces have a concave surface shape, a concave surface shape, a convex surface shape, a concave surface shape, a convex surface shape, and a concave surface shape, respectively, wherein the first reflection surface has a largest curvature radius of 3450 mm. In the second embodiment of this document, the first to sixth surfaces have a concave surface shape, a concave surface shape, a convex surface shape, a concave surface shape, a convex surface shape, and a concave surface shape, respectively, wherein the first reflection surface has a largest curvature radius of 2079 mm.

Applicant respectfully submits that U.S. Patent No. 6,556,648 shows in Table 7 an optical system in which the first to sixth surfaces have a convex surface shape, a concave surface shape, a convex surface shape, a concave surface shape, a convex surface shape, and a concave surface shape, respectively. The first reflection surface has a largest curvature radius of 345 mm.

Applicant respectfully submits that U.S. Patent No. 6,396,067 shows a first embodiment in which the first to sixth surfaces have a convex surface shape, a concave surface shape, a concave surface shape, a convex surface shape, a convex surface shape, and a concave surface shape, respectively. The second reflection surface has a largest curvature radius of 925 mm.

Applicant respectfully notes that U.S. Patent Application Publication No. 2003/0063375 was filed in the U.S. on July 29, 2002 and published on April 3, 2003, and is of record, having been cited in the November 4, 2003, Information Disclosure Statement. Accordingly, it is not listed on the Form PTO-1449. Applicant respectfully submits that this document discloses two embodiments. In the first embodiment, the first to sixth surfaces have a concave surface shape, a convex surface shape, a convex surface shape, a concave surface shape, a convex surface shape, and a concave surface shape, respectively, wherein the third reflection surface has a largest curvature radius of 432 mm. In the second embodiment of this document, the first to sixth surfaces have a concave surface shape, a convex surface shape, a convex surface shape, a concave surface shape, a convex surface shape, and a concave surface shape, respectively, wherein the fourth reflection surface has a largest curvature radius of 390 mm. Column 8, lines 10-11 state that an intermediate image is formed between the fourth and fifth mirrors. This publication corresponds to commonly-assigned Application No. 10/207,938 filed July 29, 2002, in the names of Masayuki Suzuki and Chiaki Terasawa, and Applicant also respectfully directs the Examiner's attention to the claims of that application.

Applicant respectfully submits that Japanese Laid-Open Patent Appln. No. 2004-516500 corresponds to WO 02/48796 A2, as does US 2004/0051857 A1.

FORMAL MATTERS

Any fee required in connection with this paper should be charged to Deposit Account 06-1205. A duplicate of this paper is enclosed.

CONCLUSION

It is respectfully requested that the above information be considered by the Examiner and that a copy of the enclosed Form PTO-1449 be returned indicating that such information has been considered.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

  
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U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICELIST OF REFERENCES CITED BY APPLICANT(S)  
(Use several sheets if necessary)

Submitted: September 17, 2004

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**00684.003545**APPLICATION NO.  
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APPLICANT

**MASAYUKI SUZUKI**

FILING DATE

**November 4, 2003**

GROUP

**2851**

## U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		<b>6,033,079</b>	<b>3/07/2000</b>	<b>Hudyma</b>	<b>359</b>	<b>857</b>	
		<b>6,556,648 B1</b>	<b>4/29/2003</b>	<b>Bal, et al.</b>	<b>378</b>	<b>34</b>	
		<b>6,396,067 B1</b>	<b>5/28/2002</b>	<b>Braat</b>	<b>250</b>	<b>492.2</b>	
		<b>2002/0171048 A1</b>	<b>11/21/2002</b>	<b>Braat</b>	<b>250</b>	<b>492.2</b>	
		<b>2004/0051857 A1</b>	<b>3/18/2004</b>	<b>Hudyma, et al.</b>	<b>355</b>	<b>67</b>	

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
		<b>WO 02/48796 A2</b>	<b>6/20/2002</b>	<b>PCT</b>			
		<b>2004-516500</b>	<b>6/03/2004</b>	<b>Japan</b>			<b>Abstract</b>

## OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER	DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Sheet 1 of 1

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